

ON TO 2050

Stormwater and Flooding

ON TO 2050 Strategy Paper

CMAP Environment and Natural Resources
Working Committee

February 2, 2017

Agenda

- Brief recap of purpose and scope
- Step 1: Causes and drivers of flooding
- Step 2: Existing flooding impacts and extent
- Next Steps



Purpose

- Integrate a better understanding of the extent and costs of both urban and riverine flooding, as well as how those could grow due to climate change, into ON TO 2050.
- Identify the barriers to effective stormwater management and develop policy approaches to reduce flooding impacts.
- Focus efforts in areas of greatest need in the region.
- Build connections with other policy work being developed for the next plan.



Scope of work

Step 1: Causes and drivers of flooding

Step 2: Existing flooding impacts and extent

Step 3: Existing responses and approaches to stormwater and flood mitigation and prevention

Step 4: Identify barriers to effective stormwater management

Step 5: Building an effective regional response



Step 1: Causes and drivers of flooding

Purpose: Qualitative review to establish a core understanding for future recommendations.

- Historical, current, and projected precipitation patterns.
- How the location, design, and extent of development.
- Underlying environmental conditions.



Causes of flooding

Causes organized into five main categories:

- Environmental conditions
- Climate change
- Regulatory structure
- Development extent and location
- Stormwater system design and maintenance



Causes of flooding

Environmental conditions

- Flat topography
- Saturated or poorly drained soils and high groundwater table

Climate change

- Increased frequency and intensity of storm events
- Reduced soil capacity from increases in temperatures and drought
- Increases in winter rain and denser, heavier snow

Regulatory structure

- Favors standardized approach
- Outdated floodplain boundaries
- Static precipitation design standards



Causes of flooding

Development extent and location

- Increased impervious cover
- Lack of coordination and expertise in development process
- Development in the floodplain
- Development in saturated or poorly drained soils and areas with high groundwater table

Stormwater system design and maintenance

- Legacy of conveyance designs
- Reduced vegetated groundcover and compacted soils
- Inadequate design capacity and maintenance



Drivers that perpetuate flooding

Drivers that perpetuate flooding

- Implementation depends on redevelopment
- Lack of adequate information
- Subsidized flood insurance



Step 2: Existing flooding impacts and extent

Purpose: Summarize documented damages of flooding and explore where flooding impacts are less widely known:

- Findings of the Urban Flooding Awareness Act
- Buildings, Neighborhoods, and Vulnerable Populations
- Water Resources
- Parks and Open Space

Follow-up Memo:

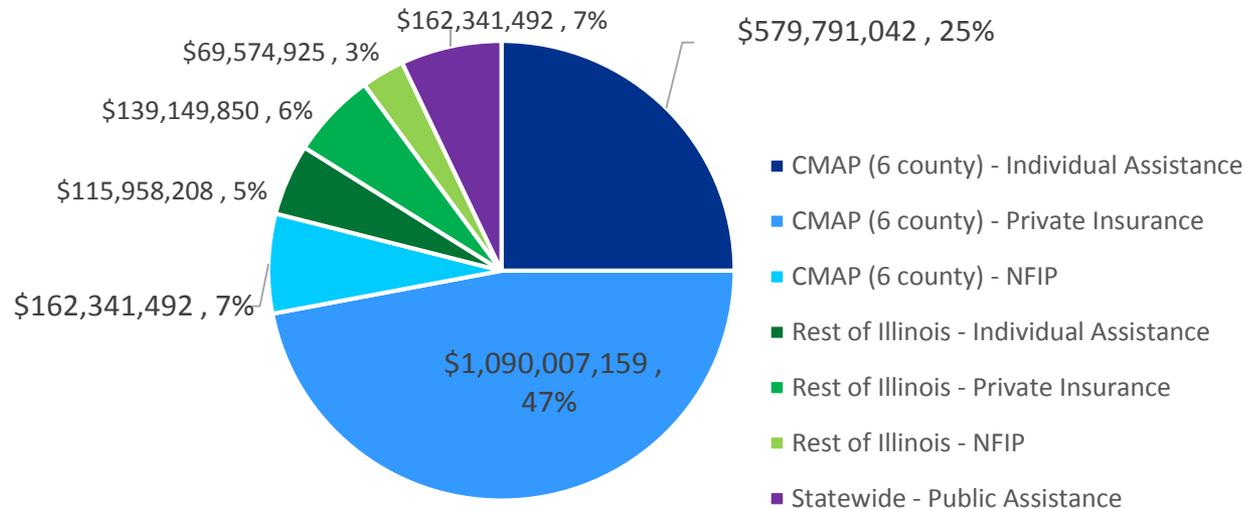
- Transportation Impacts
- Analyze NFIP, FEMA, and SBA data within Chicago Region
- Explore geography of damages in relation to socioeconomic and demographic factors



Step 2: Existing flooding impacts and extent

- Findings of the Urban Flooding Awareness Act
 - Statewide: \$2.319 billion in damages between 2007-2014.
 - 6-county region: 85%, or 1.975 billion
 - Majority of payments connected to 5 specific storm events
 - 90% of claims were outside of the mapped floodplain.

Total insurance and disaster relief payouts by claim type and region for the State of Illinois, 2007-2014.



Step 2: Existing flooding impacts and extent

- Buildings, Neighborhoods, and Vulnerable Populations
 - Decreased property values
 - Increased maintenance and repair costs
 - Increased foreclosures, vacancies, and disinvestment
 - Decline in health and quality of life
- Water Resources
 - Delivers pollutants
 - Alters hydrology and reduces infiltration
 - Overwhelms capacity of storm and wastewater infrastructure
 - Counts against Lake Michigan allocation



Step 2: Existing flooding impacts and extent

- Parks and Open Space
 - Exacerbate invasive species and increase restoration demands
 - Increase erosion and sedimentation
 - Reduce recreation opportunities
 - Stormwater issues on adjacent properties



Next steps

- **February – Memo 1:** Causes and existing flooding impacts
 - Please send comments by February 16, 2017 – nbeck@cmap.illinois.gov
 - Transportation Impacts and documented damages summary coming separately.
- **March – Memo 2:** Current responses and priority barriers
- **May – Memo 3:** Approaches to priority barriers and a draft framework
- **June – Draft Strategy Paper**
- **July – Final Strategy Paper**



Comments or Questions

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